LINE OUTPUT PENTODE

Pentode intended for use as line output tube in television receivers.

QUICK REFERENCE DATA				
Anode peak voltage	V_{a_p}	max.	7	kV
Cathode current	I_k	max.	200	mA
Drive at V_{a_p} = 7 kV		min.	120	V

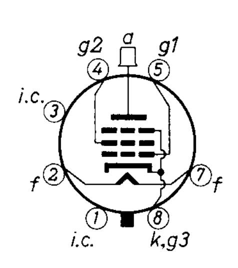
HEATING: Indirect by A.C. or D.C.; series supply

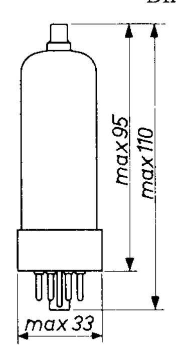
Heater current	I_f	300	mA
Heater voltage	V_f	25	V

DIMENSIONS AND CONNECTIONS Dimensions in mm

Base: Octal

Top cap: Type 1





CAPACITANCES

Anode to all except grid No.1	$C_{a(g_1)}$	8	pF
Grid No.1 to all except anode	$C_{g_1(a)}$	17.5	pF
Anode to grid No.1	C_{ag_1}	max. 1.1	pF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	100	V
Grid No. 2 voltage	V_{g_2}	100	V
Grid No. 1 voltage	V_{g_1}	-8.2	V
Anode current	I_a	100	mA
Grid No. 2 current	I_{g_2}	7	mA
Transconductance	S	14	mA/V
Amplification factor	$\mu_{g_2g_1}$	5.6	
Internal resistance	R_i	5	kΩ

REMARKS

On pages D to M curves are given for nominal new tubes. On designing a line output circuit it has to be taken into account that due to tube spread and deterioration during life the current may be reduced by 25%.

When the tube is operated below the knee of its I_a-V_a characteristic the screen grid series resistor must have a minimum value of 2.2 kΩ to avoid the occurrence of Barkhausen oscillations.

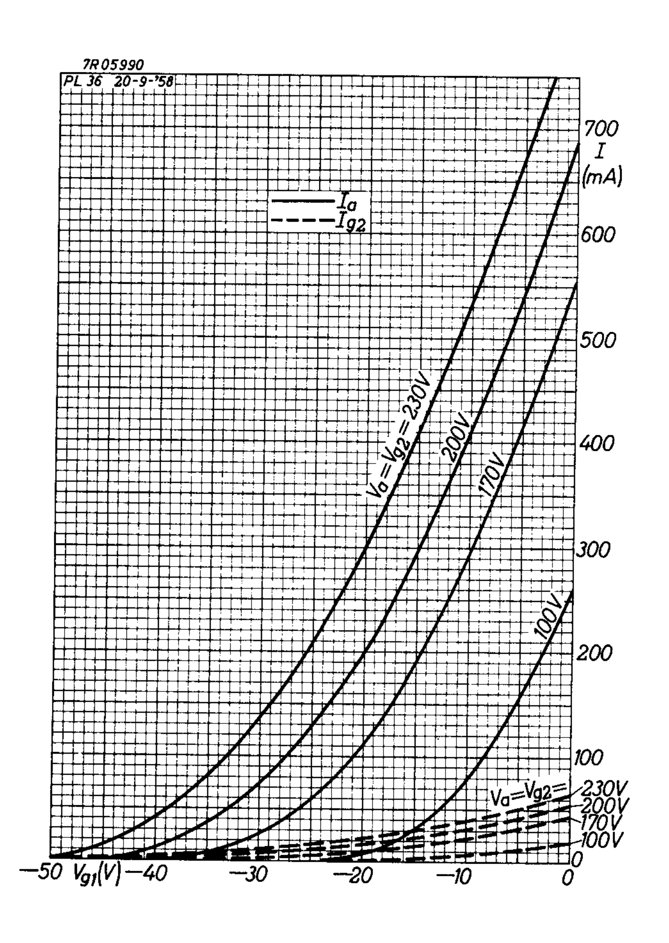
The min. drive at V_{ap} = 5 kV is 100 V
and at V_{ap} = 7 kV 120 V

LIMITING VALUES (Design centre rating system)

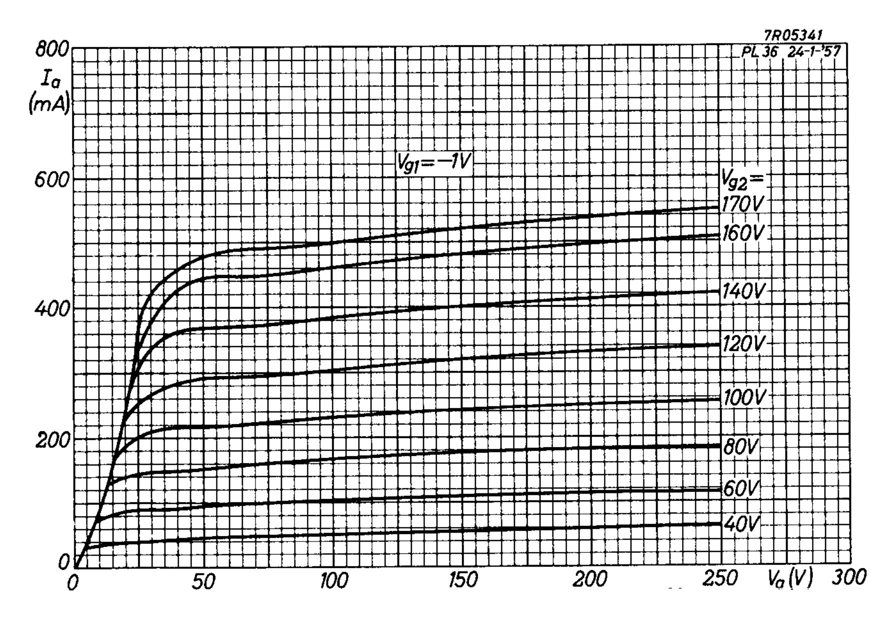
Anode voltage	V_{ao}	max.	550	V
	V_a	max.	250	V
Anode peak voltage				
positive	V_{ap}	max.	7	kV [1]
negative	$-V_{ap}$	max.	1.5	kV [1]
Grid No.2 voltage	$V_{g_{2o}}$	max.	550	V
	V_{g_2}	max.	250	V
Grid No.1 peak voltage	$V_{g_{1p}}$	max.	1	kV [1]
Anode dissipation	W_a	See page 7		
Grid No.2 dissipation	W_{g_2}	See page 7		
Anode + grid No.2 dissipation	$W_a+W_{g_2}$	See page 7		
Cathode current	I_k	max.	200	mA
Grid No.1 resistor	R_{g_1}	max.	0.5	MΩ [2]
Cathode to heater voltage				
A.C. value	V_{kf}	max.	250	V_{RMS}
D.C. value, k pos.	V_{kf}	max.	250	V
D.C. value, k neg.	V_{kf}	max.	200	V

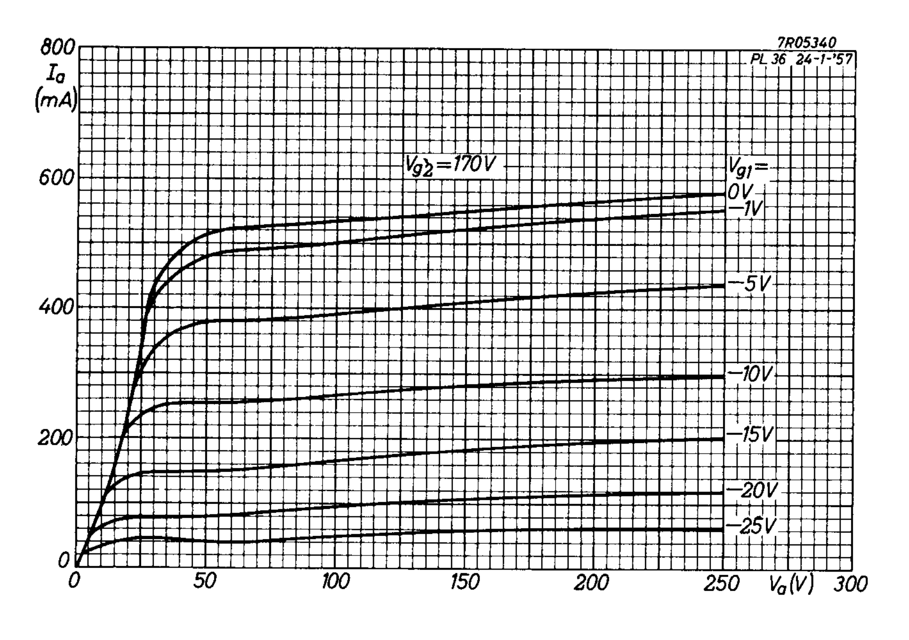
[1]) Valid for application in line output circuits where the max. pulse duration is 22% of a cycle with a max. of 18 μs.

[2]) R_{g_1} = max. 2.2 MΩ for line output application only.

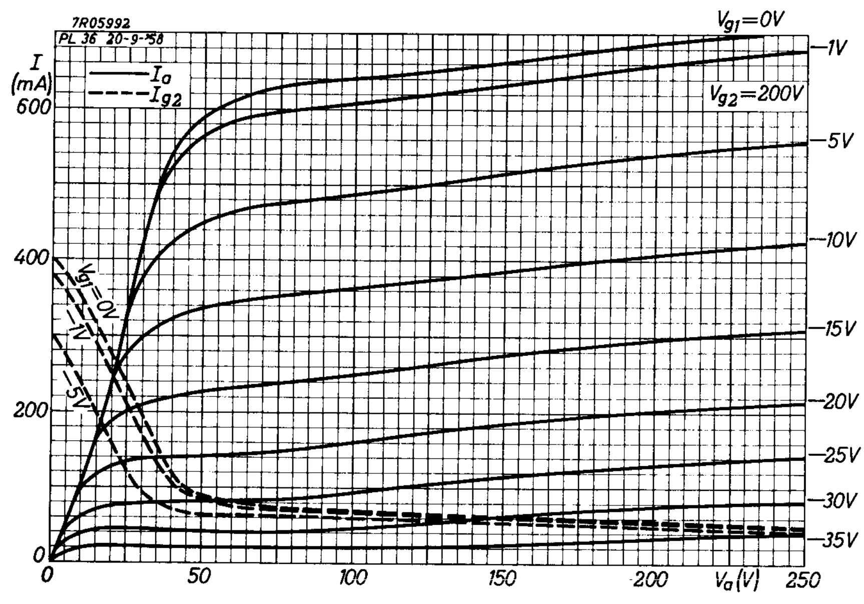

7R05990
PL 36 20-9-'58
Ia
Ig2
700
I
(mA)
600
500
400
300
200
100
0
Va=Vg2=230V
200V
170V
100V
Va=Vg2=
230V
200V
170V
100V
−50 Vg1(V) −40
−30
−20
−10
0

7R05991
PL 36 20-9-'58
800
600
400
200
0
I
(mA)
V_{g1}=0V
-1V
-5V
-10V
-15V
-20V
-25V
-30V
-35V
-40V
—— I_a
- - - - I_{g2}
V_{g2}=230V
V_{g1}=0V
-1V
-10V
0
50
100
150
200
250
V_a(V)
300





7R05340
PL 36 24-1-'57
800
I_a (mA)
600
400
200
0
V_{g2}=170V
V_{g1}=
0V
−1V
−5V
−10V
−15V
−20V
−25V
0
50
100
150
200
250
V_a(V)
300



7R05992
PL 36 20-9-'58
I (mA)
I_a
I_{g2}
600
400
200
0
V_{g1}=0V
−1V
V_{g2}=200V
−5V
−10V
−15V
−20V
−25V
−30V
−35V
V_{g1}=0V
−1V
−5V
0
50
100
150
200
V_a(V)
250

7206881

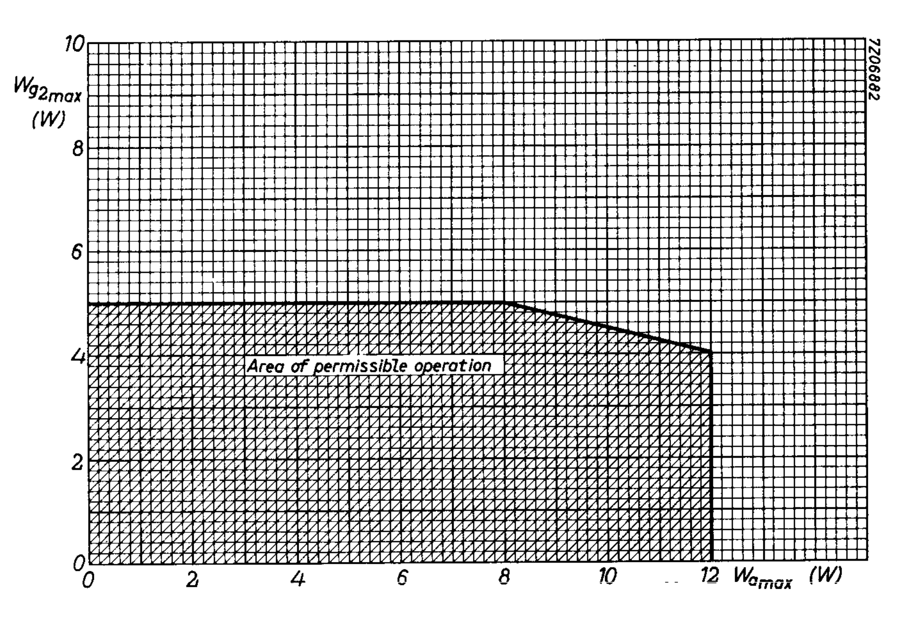
The max. permissible dissipations should not be exceeded with the chosen max. mean value of the beam current of the picture tube. If necessary a protecting device should be applied in order to avoid exceeding these dissipation.

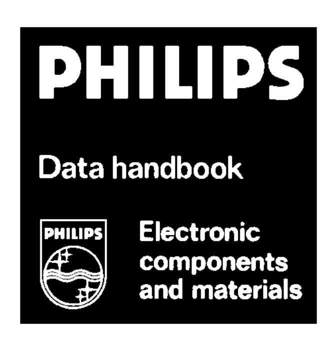
W_{g2max} (W)

0, 2, 4, 6, 8

Area of permissible operation (for stabilised line-output circuits)

0, 2, 4, 6, 8, 10, 12 $W_{a_{max}}$ (W)





PL36

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8	FP	1999.03.19